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moving at least one of the first and second valve members relative to the other of the valve members to increase or decrease the exit flow area, whereby the fuel/air mixture velocity is respectively decreased or increased.

31. (New) The method of claim 30 wherein the flowing step includes the step of flowing the fuel/air mixture into a single stage combustion chamber.

32. (New) The method of claim 30 wherein the premixer includes a mixing tube having an axis, and wherein the flowing step includes the step of deflecting the fuel/air mixture away from the axis.

IN THE DRAWING:

Applicant requests approval of the proposed changes to Fig. 20B of the drawing as detailed in the accompanying Proposed Drawing Changes. Applicant requests that the requirement for corrected formal drawings be postponed until Notice of Allowance.

REMARKS

In the subject Office Action, the Examiner required election from among species I-VIII which Applicant believes to be an unduly narrow classification. Presently designated species V-VI (Figs. 19-20), present variations on the basic embodiment disclosed in Figs. 19A-19C that utilize a axially movable mixing tube/venturi portion equipped with a segmented end nozzle which together move in relation to a surrounding fixed skirt to vary the exit flow area. Consequently, Applicant proposes that the specie VI be redesignated to Figs. 19A-C and Figs. 20A and 20B. Applicant believes that the same claim designations set forth above would apply to the proposed newly designated specie VI, that is, including Figs. 19A-19C and Figs. 20A and 20B.

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Regarding the amendments to the claims, amendments to original claims 8 and 23 are made to correct a typographical error and to improve clarity, respectively. Newly added claims 27 through 32 are presented to provide generic claims that are applicable to all of the species disclosed herein that relate to the "variable exit geometry" feature. That is, Figs. 16-21 all depict a gas turbine gas generator having a premixer with a valve situated at the premixer exit to vary the exit flow area, and consequently the mixture velocity to the gas turbine gas generator combustor, in order to avoid flash back combustion within the premixer and to mitigate impingement on the interior walls of the combustor. Moreover, each of the combustors disclosed in the Figures is a "single stage combustor" that utilizes convection cooling on the outside walls of the combustor instead of film cooling penetrations through the combustor walls. Still further, each of the disclosed embodiments also utilizes a valve member that acts to deflect the flowing fuel/air mixture away from the mixing tube axis, to provide better utilization of the combustion space in the combustor.

Wherefore, Applicant respectfully requests consideration of the request to redesignate species, and examination of the designated claims 1, 3-6, 9, 10-12, 13-14, 20-22, 23-26, and 27-32 (newly added). Applicant hereby encloses a check for $276.00 to cover the addition 2 new independent claims and 6 claims total to the number of claims previously paid for. Also, to the extent that an extension of time is necessary to consider this response, and such is not requested elsewhere, an extension of time is hereby requested and the Examiner is hereby authorized to charge deposit account 06-0916 for the extension of time fees. Furthermore, to the extent that the amount

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enclosed for the newly added claims is not correct, the Examiner is hereby authorized to charge any deficiencies or to credit any excess to Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Dated: June 17, 2003

By: _____
Bruce C. Zotter
Reg. No. 27,680

Enclosures: Notice to Chief Draftsman with Proposed Changes, including marked-up Fig. 20B

Check in the Amount of $276.00

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Application Number: 10/014,415
Filing Date: December 14, 2001
Attorney Docket Number: 03229.0018-02

APPENDIX TO AMENDMENT OF JUNE 17, 2003

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Amendments To The Specification

At page 73, lines 1-12:

Also, as is shown in Fig. 17B which is a schematic detail of another variation of the embodiment of Fig. 16, venturi tube 1434" can be spaced from liner 1422" and cooling shroud 1428" by sleeve member 1478" which provides coolant channels 1478a" to prevent excessive temperatures at venturi exit 1454". Due to the compressed air flow through coolant channels 1478a" directly into combustion zone 1424" [by passing] bypassing venturi mixing tube 1434", the fuel/air ratio may not be controlled to the degree possible with the variations in Fig. 16 and Fig. 17A which may [relay] rely on a thermal barrier coating to prevent excessive mixing tube exit temperatures. While not presently preferred, however, the variation depicted in Fig. 17B is considered part of the present invention in its broadest aspect and is expected to minimize flash backs and fuel residue due to impingement, as explained previously.

Amendments To The Claims

8. (Amended) The premixer apparatus as in claim [5] 7, wherein the skirt is fixed and the valve plate is movable, relative to the mixing tube entrance.

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23. (Amended) A gas turbine gas generator operable with a fuel source, the gas generator comprising:

an air compressor;

a turbine;

a shaft assembly interconnecting the air compressor and the turbine;

and a combustor operatively connected to provide combustion gases to the turbine;

wherein the engine further includes one or more premixers each having

(1) a mixing tube configured for receiving and mixing the fuel and air, the mixing tube having an axis and an exit for discharging a fuel/air mixture to the combustor; and

(2) a mixture valve associated with said mixing tube exit and including inner and outer valve members that define an exit flow area;

wherein the defined exit flow area includes at least two segmented, substantially opposed area portions with respect to angular position about the mixing tube axis;

wherein the segmented area portions include[s] ports for directing the discharged fuel/air mixture relative to the mixing tube axis; and

wherein at least one of said inner and outer valve members is movable relative to the other of said valve members to selectively vary the defined exit flow area with respect to time.

27. (New) A gas turbine gas generator for combusting fuel and air comprising:

a combustion chamber; and

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a premixer having an exit in flow communication with the combustion chamber for mixing the fuel and air to provide a fuel/air mixture,

wherein the premixer further comprises a controllable mixture valve associated with the premixer exit and having first and second valve members that together define an exit flow area,

wherein at least one of said first and second valve members is movable relative to the other of said valve members to selectively vary the defined exit flow area and fuel/air mixture velocity.

28. (New) The gas turbine gas generator as in claim 27 wherein the combustion chamber is a single stage combustion chamber.

29. (New) The gas turbine gas generator as in claim 27 wherein the premixer includes a mixing tube having an axis, and wherein the fuel/air mixture is deflected away from the mixing tube axis by said valve.

30. (New) A method of controlling the velocity of a fuel/air mixture introduced to the combustion chamber of a gas turbine gas generator from a fuel/air premixer, the premixer having an exit in flow communication with the combustion chamber, the method comprising:

providing a controllable mixture valve associated with the premixer exit, the valve including first and second valve members that together define an exit flow area;

flowing the fuel/air mixture into the gas turbine gas generator combustion chamber through the valve; and

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moving at least one of the first and second valve members relative to the other of the valve members to increase or decrease the exit flow area, whereby the fuel/air mixture velocity is respectively decreased or increased.

31. (New) The method of claim 30 wherein the flowing step includes the step of flowing the fuel/air mixture into a single stage combustion chamber.

32. (New) The method of claim 30 wherein the premixer includes a mixing tube having an axis, and wherein the flowing step includes the step of deflecting the fuel/air mixture away from the axis.

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